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ABSTRACT

The United Kingdom has a history of performance assessment even for accountability purposes, as the public examinations (standardized achievement tests) at age 16 demonstrate. What the country does not have is a strong history in the area of equity. Debate and policy-making, when concerned at all, have been concentrated on equality of opportunity, but there has been relatively little interest in equality of outcome. Equity does not imply equality of outcome and cannot presume identical experiences for all. Both are unrealistic. Equity in assessment rather implies that assessment practice and interpretation of results are fair and just for all groups. Experience in the United Kingdom with performance assessment suggests that high stakes performance assessment can change curriculum focus and broaden teaching. It is possible to use performance assessment for accountability and certification purposes. Problems do arise, and some of these are discussed in the context of assessment pertaining to the National Curriculum. Although there is no such thing as a perfectly fair test, paying attention to assessment administration and scoring can make tests more fair. Although equality of outcome is not possible, genuine equality of access is a necessary goal. (Contains 22 references.) (SLD)

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What Do We Mean By Equity in Relation to Assessment?

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paper presented as part of the symposium
Equity Issues in Performance Assessment

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What do we mean by equity in relation to assessment?

Introduction

The UK has a history of Performance Assessment even for accountability purposes: the public examination at 16, the GCSE, involves written responses of the short answer and essay type, practical assessment, oral assessments, and extend pieces of coursework which are assessed in school by the teachers. All marking has a judgmental element and is done centrally by specially-trained teachers; it is then moderated either statistically or through inspection. Multiple choice testing, though it exists in the UK, has never been widely used and is not considered to be an appropriate basis for high-status examinations. At the other end of the age scale is the National Curriculum Assessment program for seven year olds; this involves teachers' own assessments of pupil attainment (TA or Teacher Assessment), two standardised tests, and some performance-based assessment tasks (STs or Standard Tasks). The problems and impact of this latter assessment program, together with the difficulties in developing and implementing it, were reported at this conference last year and the year before. (Gipps 1992, 1993).

Where we do not have a strong history is in the area of equity. Debate and policy making where it has featured at all has referred to equal opportunities in education with a brief excursion in to compensatory education for disadvantaged groups. Early attempts to achieve equality of opportunity, for girls and boys, focused in the main on equality of resources and access to curriculum offerings; but this we now see as a naive approach to social equality given the very different out-of-school experiences of girls and boys. The fundamental problem is that this policy focus reflects a deficit model approach to inequality: girls are 'blamed' for behaving like girls and encouraged to behave more like boys. This model implies the possibility of overcoming disadvantage through the acquisition of what is lacking. This approach leaves the status quo essentially unchanged since girls are unlikely to achieve parity through equality of resources and formal equality of access alone. As Yates puts it 'where the criteria of success and the norms of teaching and curriculum are still defined in terms of the already dominant group, that group is always likely to remain one step ahead.' (Yates 1985 p. 212). Equal opportunities is a policy area which has been hotly contested in the UK: it is seen by the extreme right as a revolutionary device which would disturb the 'natural' social order and as an attempt to attack White British society, and by the extreme left as essentially conservative because the gross disparities in wealth, power and status which characterise our society remain unchallenged.

A second approach is one which looks for equality of outcome (as evidence of equal opportunities) and this underpins analyses and discussions of group performance at public examination level in the UK. The attitude to equity in the USA is very different from that in the UK, for reasons of history and because of the population structure: 'The US has a long-term commitment to equity for its wholly immigrant population' Baker and O'Neil (1994) p. 3 manuscript) and is evidenced in equal outcome terms: "The term equity is used principally to describe fair educational access for all students; more recent judicial interpretations, however, have begun the redefinition of equity to move toward the attainment of reasonably equal group

outcomes" (Baker and O'Neil 1994 p. 2 of manuscript) "... the educational equity principle should result in students receiving comparable education yielding comparable performances." (p. 4 op cit)

In the UK equal opportunities has come to be defined as 'open competition for scarce resources' (Wood 1987) in late 1980/early 1990s. The notion of competition is, however, antithetical to equal outcomes: in a competition the best person wins the prize; competition is <u>not</u> designed to offer each individual the best outcome possible for them. In terms of education the latter is, of course, what we seek (while accepting that for some highly selective purposes identifying the 'best' individuals is necessary). Indeed 'fair' competition requires actual equal opportunities and a specification of the rules of the game so that all participants are equally well-prepared.

Apple's (1989) review of public policy in the USA, Britain and Australia leads him to conclude that equality has been redefined: it is no longer linked to group oppression and disadvantage but is concerned to ensure individual choice within a 'free market' perception of the educational community. In Apple's view this redefinition has re-instated the disadvantage model and underachievement is once again the responsibility of the individual rather than the educational institution.

He argues that attention in the equity and education debate must be refocused on important curricular questions, to which we add assessment questions, in the table below:

<u>Table 1 Curriculum and Assessment Questions in Relation to Equity</u>[1]

Curricular Questions	**Assessment Questions**
Whose knowledge is taught?	What knowledge is assessed and equated with achievement?
Why is it taught in a particular way to this particular group?	Are the form, content and mode of assessment appropriate for different groups and individuals?
How do we enable the histories and cultures of people of colour, and of women, to be taught in responsible and responsive ways?	Is this range of cultural knowledge reflected in definitions of achievement? How does cultural knowledge mediate individuals' responses to assessments in ways which alter the construct being assessed?

Despite a lack of consensus there seems to be a general understanding that formal equality of opportunity is not sufficient to ensure fairness. Our view is that while one must strive for actual equality of opportunity, equality of outcomes is not an appropriate goal. The focus on equality of outcomes is, we feel, unsound, because

[1] from Gipps and Murphy 1994 (and after Apple 1989)

different groups may indeed have different qualities and abilities and certainly experiences: manipulating test items and procedures in order to produce equal outcomes may be doing violence to the construct or skill being assessed and certainly camouflaging genuine group differences. We use therefore, given the contested nature of the equal opportunities concept in the UK, the concept of equity which is defined in the dictionary as moral justice, or the spirit of justice.

Equity, in our view, does not imply equality of outcomes and does not presume identical experiences for all: both of these are unrealistic. The concept of equity in assessment as we use it implies that assessment practice and interpretation of results are fair and just for all groups. Our focus on equity in relation to assessment considers, therefore, not only the practices of assessment, but also the definition of achievement, whilst at the same time recognising that other factors, eg pupil motivation and esteem, teacher behaviour and expectation also come into play in determining achievement.

Equity and Assessment

It is important to remember that 'objective' assessment has traditionally been seen as an instrument of equity: the notion of the standard test as a way of offering impartial assessment is of course a powerful one, though if equality of educational opportunity does not precede the test, then the 'fairness' of this approach is called into question. Most tests and examinations are amenable to coaching and pupils who have very different school experiences are not equally prepared to compete in the same test situation.

As Madaus (1992) points out

> "... in addressing the equity of alternative assessments in a high-stakes policy-driven exam system policy must be crafted that creates first and foremost a level playing field for students and schools. Only then can the claim be made that a national examination system is an equitable technology for making decisions about individuals, schools or districts". (p. 32)

The same point is also made by Baker & O'Neil (1994).

The traditional psychometric approach to testing operates on the assumption that technical solutions can be found to solve problems of equity with the emphasis on using elaborate techniques to eliminate biased items (Murphy 1990; Goldstein 1993). The limitation of this approach is that it does not look at the way in which the subject is defined (i.e. the overall domain from which test items are to be chosen), nor at the initial choice of items from the thus-defined pool, nor does it question what counts as achievement. It simply 'tinkers' with an established selection of items. Focusing on bias in tests, and statistical techniques for eliminating 'biased' items, not only confounds the construct being assessed, but has distracted attention from wider equity issues such as actual equality of access to learning, 'biased' curriculum, and inhibiting classroom practices.

Bias in relation to assessment is generally taken to mean that the assessment is unfair to one particular group or another. This rather simple definition however belies the complexity of the underlying situation. Differential performance on a test, i.e. where different groups get different score levels, may not be the result of bias in the assessment; it may be due to real differences in performance among groups which may in turn be due to differing access to learning, or it may be due to real differences in the group's attainment in the topic under consideration. The question of whether a test is biased or whether the group in question has a different underlying level of attainment is actually extremely difficult to answer. Wood (1987) describes these different factors as the opportunity to acquire talent (access issues) and the opportunity to show talent to good effect (fairness in the assessment).

When the existence of group differences in average performance on tests is taken to mean that the tests are biased, the assumption is that one group is not inherently less able than the other. However, the two groups may well have been subject to different environmental experiences or unequal access to the curriculum. This difference will be reflected in average test scores, but a test that reflects such unequal opportunity in its scores is not strictly speaking biased, though its use could be invalid.

Hence to achieve equity in assessment interpretations of students' performance should be set in the explicit context of what is or is not being valued: an explicit account of the constructs being assessed and of the criteria for assessment will at least make the perspective and values of the test developer open to teachers and pupils. A considerable amount of effort over the years has gone into exploring cognitive deficits in girls in order to explain their poor performance on science tests; it was not until relatively recently that the question was asked whether the reliance on tasks and apparatus associated with middle class white males could possibly have something to do with it. As Goldstein (1993) points out, bias is built into the test developers' construct of the subject and their expectations of differential performance.

Construct validity is the key to developing good quality assessment and we need to look at this not just in relation to the subject but also from the point of view of the pupil being assessed. Group moderation among teachers has the potential for focusing on the construct being assessed, initiating discussion about how the meaning of a task is construed by teachers and hopefully by pupils (Gipps 1994).

Performance assessment cannot be developed using traditional psychometric techniques for analysing items, because far fewer items are involved and there is no assumed underlying score distribution. This may force a shift towards other ways of reviewing and evaluating items based on qualitative approaches, for example sensitivity review, a consideration of the construct, how the task might interact with experience etc.; such a development is to be welcomed.

Pupils do not come to school with identical experiences and they do not have identical experiences at school. We cannot, therefore, expect assessments to have the same meaning for all pupils. What we must aim for, though, is an equitable approach where the concerns, contexts and approaches of one group do not dominate. This however is by no means a simple task; for example test developers are told that they should avoid context which may be more familiar to males than females or to the dominant culture.

But there are problems inherent in trying to remove context effects by doing away with passages that advantage males or females, because it reduces the amount of assessment material available. De-contextualised assessment is anyway not possible, and complex reasoning processes require drawing on complex domain knowledge. Again, clear explanation of the constructs and contexts are important.

In an assessment which looks for best rather than typical performance the context of the item should be the one which allows the pupil to perform well but this suggests different tasks for different groups which is in itself hugely problematic. However, what we can seek is the use, within any assessment programme, of a range of assessment tasks involving a variety of contexts, a range of modes within the assessment, and a range of response format and style. This broadening of approach is most likely to offer pupils alternative opportunities to demonstrate achievement if they are disadvantaged by any one particular assessment in the programme.

Indeed this is included in the Criteria for Evaluation of Student Assessment Systems (NFA 1992):

> "- to ensure fairness, students should have multiple opportunities to meet standards and should be able to met them in different ways"
> " - assessment information should be accompanied by information about access to the curriculum and about opportunities to meet the Standards"
> " - ... assessment results should be one part of a system of multiple indicators of the quality of education." (NFA 1992 p. 32)

Performance Assessment

I take performance assessment to mean assessments which: model the authentic task ie require the pupil to perform in the assessment what we wish them to learn in the classroom; usually focus on higher levels of cognitive complexity; require the production of a response (in a range of modes); and require qualitative judgements to be used in the marking.

The difference in the UK and USA settings in relation to performance assessment should not be underestimated: as explained in the Introduction assessment in the UK is predominantly on the PA model. However, we are not using PA as a basis for bringing about educational reform. Furthermore, within PA we can list a range of approaches from the high status written examination, the Standard Tests and Tasks of the National Curriculum assessment program, teacher assessed coursework in GCSE, to portfolios and Records of Achievement. As PA is rather less-well developed in the US there is a tendency to use the generic term: hence the concern among minority groups that 'alternative equals non-standard equals sub-standard' (Baker and O'Neil, 1994). In the UK, I should point out, not all PAs are considered equal: there is a world of difference between the public examination and the Record of Achievement and this is reflected in the status of these assessments: a Record of Achievement would not the considered sufficiently external and rigorous for selection and accountability purposes. The amount of information provided is also an issue: a percentage mark, grade or level is easier to use (for anything other than teaching purposes) than is the more qualitative, descriptive information from RoAs.

It is important therefore to distinguish between say portfolio assessment and specified PA tasks which are set for trained teachers and marked by them, against specified criteria using agreed marking systems, with the system underpinned by moderation. These differences in approach will have significant effects on consistency of approach and scoring, affecting the construct assessed and inter-rater reliability, both of which are highly pertinent to equity issues, particularly if the assessments are used for high-stakes purposes.

The question which seems to be being addressed in the US is, is PA a good form of assessment? This question has however to be deconstructed into: a good form of assessment for what purpose? and better than which other forms of assessment? Our experience in the UK would suggest that high stakes PA can change curriculum focus and broaden teaching: this happened as a result of the introduction of the GCSE at 16 (HMI 1988) and to a certain extent at age 7 with NC assessment (Gipps et al 1992). The strain on teachers which this sort of change brings should not be underestimated, however, nor indeed their need for in-service training in the subject area and the new assessment model.

All forms of PA support school-based assessment and formative assessment better than standardised tests can - because of their flexibility and potential to assess constructs in more depth. Furthermore, it is possible to use a highly structured, externally marked and moderated PA program for accountability and certification purposes; the resources required to support such a program are significant, however, and the English experience is that it is manageable at only one or two points in the system (indeed there should be no need for more than this).

Performance Assessment and Equity Issues in National Curriculum Assessment

The National Assessment program requires that pupils are assessed across the full range of the National Curriculum using external tests and teachers' own assessment. The external tests were originally called Standard Assessment Tasks (SATs) and the teachers' assessments are called Teacher Assessment (TA). The original SATs used in 1991 and 1992 were true performance assessments and involved classroom based, externally-set, teacher assessed activities and tasks. For example, at age seven reading was assessed by the child reading aloud a short passage form a children's book chosen from a list of popular titles, using dice to play maths games, using objects to sort etc. At age 14 there were extended investigative projects in maths and science and assessments based on classroom work in English. What they had in common, across both ages, as well as the performance element is classroom, rather than formal examination, administration; interaction between teacher and pupil with ample opportunity to explain the task; and a reduced emphasis on written responses - particularly at age seven.

The role of communication in PA, involving spoken and written responses together with understanding of the instructions for the task, presents a significant threat to equity for minority language groups.

Evidence from the piloting of the SATs for seven year olds in 1990 indicated that the bilingual children seemed more insecure initially when presented with new work in the SATs; when this was the case the peer group became a very important source of support. In an assessment situation, however, this posed difficulties for the teacher in deciding whether the intervention of another pupil had clarified the child's understanding of the question or supplied the correct answer. The misunderstanding of instructions was a serious problem for bilingual pupils: they appeared to relax and respond better when questions were rephrased in the mother tongue; they became more motivated and handled tasks more confidently. When activities were lengthy and complex there was a particular burden on bilingual children and examples of misunderstanding did not always come to light. Teachers felt that the bilingual children found it particularly difficult to show their true ability in maths and science. This was largely due to the difficulty of assessing oral responses in science interviews and the difficulties these children experienced in the group discussion element of science and maths investigations.
(NFER/BGC 1991)

The teachers also reported a hazard in small group testing: where children worked in mixed groups for assessment the boys were sometimes more dominant and girls took a passive role, a commonly observed pattern of gendered performance.

In our study of national assessment in primary schools[2], teachers reported strong feelings that the national assessment programme at age seven was inevitably unjust for bi-lingual children (Gipps, 1992). Since their English language skills were still in the early stages of development these children were disadvantaged in any assessment that was carried out for comparative purposes. These teachers felt that formal summative (or accountability) assessment for comparison is, at this age, unfair for such children and thus runs counter to their notion of equity. These teachers had similar views about children from disadvantaged backgrounds but their feelings about bi-lingual learners were particularly strong.

That said there was a feeling, however, that the SATs for all their difficulties of classroom management, time and unmanageability, and despite their heavy reliance on language, did offer a better assessment opportunity for children with special needs and bilingual learners, than would more traditional paper and pencil tests. Our teachers' views were that, whatever the level of disadvantage for their bilingual learners in summer 1991 - and this was where their anxieties lay, not with gender issues - that this would be increased in the more formal testing which they anticipated in summer 1992.

Furthermore, children who were second language learners tended to perform less well than other pupils on the SATs, but there was some evidence that they performed better on the SATs than in the TA, and this was a fairly widespread finding. This suggests that structured PA was better for minority pupils than (unmoderated) Teacher Assessment (and one could deduce, better than nothing) since in effect, teacher stereotype was being challenged.

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[2] National Assessment in Primary School: an evaluation
ESRC Grant No. R 000 23 21 92

In the piloting of SATs for 14 year olds in 1991 there was a detailed investigation of teachers' views in relation to these assessment tasks in maths (CATS 1991) but not in other subjects. The teachers administering the SATs felt that the nature of the SAT rendered it accessible to pupils who were not fluent in English. Aspects which contributed to this included: interaction with the teacher, the practical elements of the tasks, a normal classroom atmosphere, interactions with other pupils and the variety of presentation and assessment modes. The conclusion made is that for pupils who were not fluent in English, written materials cannot enable the demonstration of attainment without teacher-pupil interaction. Most of these teachers felt that pupils who were not fluent in English could engage in the SAT activity. Thus the style of the activity was appropriate for most of these pupils. However, only a third of teachers thought that the SAT enabled pupils to demonstrate appropriate attainment. This comment no doubt is related to the fact that overall the attainment of non-fluent pupils was below that of others in both the SAT and the TA. However, analysis of the SATs showed that pupils who were not fluent were scoring higher on the SAT than in the TA which suggests that the TA awarded by the teachers may have been an underestimate due to the pupils' perceived language difficulties, and that the SATs facilitated high performance for non-fluent pupils to a greater extent than it did for others. The pilot report of the maths scheme states that: 'if pupils who are not fluent in English are to be entitled to a fair assessment it is essential that the SATs retain the interactive, practical and flexible aspects.' (CATS 1991)

The report from the Schools Examination and Assessment Countil (SEAC) which draws together the KS3 findings in the 1991 pilot (SEAC, 1991) from the various agencies does not discuss performance by ethnic group (presumably because the sample sizes were small) but points out that for bilingual learners performance was "relatively high". This they suspect is because teachers were able to provide the normal classroom support for these pupils during the SATs, that the materials were generally accessible to pupils whose home language is not English and that the opportunity for these pupils to demonstrate their full potential if the SATs were to change to timed written tests will be reduced (as will be the case for pupils with special educational needs).

An important point emerges from these National Curriculum Assessment studies, at both age seven and fourteen: The SAT-type activity with its emphasis on active, multi-mode assessment and detailed interaction between teacher and pupil may, despite the heavy reliance on language, be a better opportunity for minority and special needs children to demonstrate what they know and can do than traditional, formal tests with limited instructions. The key aspects seem to be:

- a range of activities,
- match to classroom practice
- extended interaction between pupil and teacher to explain the task
- normal classroom setting
- a range of response modes other than written.

Furthermore, many of these pupils performed better on the SAT than in the TA and this made the teachers think hard about their evaluation of the pupils.

This point is made quite strongly in the SEAC review of the KS3 pilots: "The relative success of the 1991 SATS for children with special educational needs and English as a

second language will be reduced in 1992, unless procedures are established to allow the 1992 tests to be used flexibly with these pupils"; and "The differential performance of boys and girls is likely to be affected by the change to a largely written mode of assessment. It is important that this is monitored". (p. 2 SEAC 1991).

Conclusion

There is no such thing as a fair test, nor could there be: the situation is too complex and the notion simplistic. However, by paying attention to what we know about factors in assessment and their administration and scoring we can begin to work towards tests that are more fair to all the groups likely to be taking them, and this is particularly important for assessment used for summative and accountability purposes.

One reason why we cannot look for fair tests is that we cannot assume identical experiences for all. This is also why we do not look for equal outcomes; for this we would need assessment tailored to different groups. We do argue, therefore, that on the grounds of equity all groups be offered actual equality of access to the curriculum and that the exams and assessments are as fair as possible to all groups.

So how do we ensure that assessment practice and interpretation of results is as fair as possible for all groups? It is likely that a wide ranging review of syllabus content, teacher attitude to both boys and girls, assessment mode and item format is required, as the Table on page 3 shows, if we wish to make assessment as fair as possible to both genders. Although this is a major task, it is one which must be addressed in the developing context of national standards, national curriculum, and national assessment. As an example that it is possible, we offer the case of Physics Higher School Certificate in South Australia; girls' performance in physics has improved since 1988 when a female chief examiner was appointed. This examiner has deliberately worked within a particular model of physics (which takes a 'whole view' of the subject); simplified the language of the questions; included contexts only that are integral to particular physics problems; offered a range of different ways of answering questions which does not privilege one form of answer over another; provided a list of key instruction words and how students would go about answering questions which include these words (ESSSA 1992).

We need to encourage clearer articulation of the test/exam developers' construct on which the assessment is based, so that the construct validity may be examined by test takers and users. Test developers need to give a justification for inclusion of context and types of response mode in relation to the evidence we have about how this interacts with gender and curriculum experience. The ethics of assessment demand that the constructs and assessment criteria are made available to pupils and teachers, and that a range of tasks and assessments be included in an assessment programme. These requirements are consonant with enhancing construct validity in any case. Given the detailed, and as yet poorly understood, effect of context (Murphy 1993) on performance, the evidence that girls attend to context in an assessment task more than do boys, and the ability of changes in the context of the task to alter the construct being assessed this is an area of validity which demands detailed study. We certainly need to define the

context of an assessment task and the underlying constructs and make sure they reflect what is taught.

We must encourage the use of a range of modes and task style; we need also to expand the range of indicators used:

> "Multiple indicators are essential so that those who are disadvantaged on one assessment have an opportunity to offer alternative evidence of their expertise."
>
> (Linn, 1992, p.44)

Assessment which elicits an individual's best performance involves tasks that are concrete and within the experience of the pupil (an equal access issue) presented clearly (the pupil must understand what is required of her if she is to perform well) relevant to the current concerns of the pupil (to engender motivation and engagement) and in conditions that are not threatening (to reduce stress and enhance performance) (after Nuttall, 1987).

Although we do not look for equality of outcome, we must continue to seek genuine equality of access; this means that all courses, subjects studied, examinations etc are actually equally available to all groups and are presented in such a way that all groups feel able to participate fully. One suggestion from the United States is that, since opportunity to learn is a key factor in performance, schools may have to 'certify delivery standards' as part of a system for monitoring instructional experiences (Linn, 1993). How realistic it is to do this remains to be seen, but it does put the onus on schools to address the issue of equal access, at an actual rather than formal level.

We need to be clear about what counts as proper preparation of pupils in any assessment programme. If there are preparation practices which are considered to be unethical then they should be spelled out. The other side of the coin is that teachers and schools have a commitment to teach pupils the material on which they are going to be formally assessed. To this requirement we should add proper preparation of teachers so that they understand the basic issues in assessment and are equipped to carry out good formative assessment.

Finally, a point made by one of the reviewers of this symposium was that the fundamental issue in equity and assessment is: are group differences in measures 'real' or are they the result of the measuring system? This is, of course, the $64,000 question, but the answer is likely to be: 'a bit of both' and what we need to do is to minimise the latter, while understanding and articulating causes of the former. Another reviewer commented: is there another approach to PA which can avoid the irresolvable issue of equity. I believe we have shown that aspects of the SATs which allowed greater explanation of the task, reduced the emphasis on written response, and reduced stress levels (because both the task and the setting were familiar) are crucially important. What is interesting to us is that there is concern about equity issues in the USA in the shift from standardised tests to a PA model, while in the UK we are concerned about equity issues in the shift from PA to a more standardised model.

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